

### REMARKS

Applicant requests favorable reconsideration of this application in view of the foregoing amendments and the following remarks. Of claims 1-22 that were pending in the application, claims 6-10, 12, and 16-22 were previously withdrawn from consideration and claims 1, 11, 13, and 15<sup>1</sup> were rejected in the Office Action. Applicant appreciates the indication of allowable subject matter in claims 2-5<sup>2</sup> and 14; at this time, Applicant has opted to leave these claims in dependent claim format.

By way of this amendment, Applicant has amended examined claims 1, 2, 4, 5, and 14 and withdrawn claims 7, 9, 12, 16, 17, 19, and 21 to rectify grammatical matters, *i.e.*, the scope of protection to be afforded to each of the claims was not narrowed.

In light of the foregoing, claims 1-5, 11, and 13-15 are respectfully resubmitted for further consideration.

#### **1. Acknowledgment of Foreign Priority**

Applicant notes that the foreign priority box on page 1 of the Office Action was not completed. The certified priority documents for JP 2002-350276 and JP 2002-350277 (both of which were originally filed on December 2, 2002) were filed with the instant application on November 20, 2003. Accordingly, Applicant respectfully requests that the next Office Action acknowledge receipt of the priority documents.

#### **2. Rejection of Claims 1, 11, 13, and 15**

The Examiner rejected claims 1, 11, 13, and 15<sup>3</sup> under 35 U.S.C. § 103(a) as allegedly being obvious when considering U.S. Patent No. 6,519,933 (“Ogiso”) in view of U.S. Patent Application Publication No. 2004/0173170 (“Gaessler”). For at least the following reasons, Applicant respectfully traverses this rejection.

As grammatically amended herein, claim 1 recites a “variable valve control apparatus for an internal combustion engine provided with a variable valve mechanism that varies an operating characteristic of an intake valve, for controlling a gas amount passing through said

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<sup>1</sup> The Examiner rejected “claims 1, 5, 11, 13, and 15” under 35 U.S.C. § 103(a). The Examiner, however, confirmed in a teleconference on September 12, 2005 that claim 5, which depends from allowable claim 4, should not have been rejected. Instead, claim 5 should have been listed along with claims 2-4 and 14 as being allowable but being objected to as being dependent on a rejected base claim.

<sup>2</sup> See *id.*

<sup>3</sup> See *id.*

intake valve by variably controlling said operating characteristic”. The variable valve control apparatus includes, among other possible things (*italic emphasis added*):

- a first calculating section that calculates an amount of fresh air that flows into a cylinder of said engine;
- a second calculating section that calculates a gas amount spit-back to an intake side from the inside of the cylinder when said intake valve is opened;*
- a third calculating section that calculates said gas amount passing through said intake valve based on said fresh air amount and an amount of predetermined times the spit-back gas amount of the time when said intake valve is opened; and
- a control section that controls said variable valve mechanism based on said gas amount passing through said intake valve.

Similarly, claim 11 recites a “variable valve control apparatus for an internal combustion engine provided with a variable valve mechanism that varies an operating characteristic of an intake valve, for controlling a gas amount passing through said intake valve by variably controlling said operating characteristic”. This variable valve control apparatus includes, among other possible things (*italic emphasis added*):

- first calculating means for calculating an amount of fresh air flowing into a cylinder of said engine;
- second calculating means for calculating a gas amount spit-back to an intake side from the inside of the cylinder when said intake valve is opened;*
- third calculating means for calculating said gas amount passing through said intake valve based on said fresh air amount and an amount of predetermined times the spit-back gas amount of the time when said intake valve is opened; and
- control means for controlling said variable valve mechanism based on said gas amount passing through said intake valve.

Finally, claim 13 (*i.e.*, the claim from which claim 15 depends) recites a “variable valve control method for an internal combustion engine provided with a variable valve mechanism that varies an operating characteristic of an intake valve, for controlling a gas amount passing through said intake valve by variably controlling said operating characteristic”. This variable valve control method includes, among other possible steps (*italic emphasis added*):

- calculating an amount of fresh air flowing into a cylinder of said engine;
- calculating a gas amount spit-back to an intake side from the inside of the cylinder when said intake valve is opened;*
- calculating said gas amount passing through said intake valve based on said fresh air amount and an amount of predetermined times the spit-back gas amount of the time when said intake valve is opened; and
- controlling said variable valve mechanism based on said gas amount passing through said intake valve.

For at least the following reasons, the combination of Ogiso and Gaessler fails to teach or suggest: (a) the variable valve control apparatuses recited in claims 1 and 11; and (b) the variable valve control method recited in claim 13.

The Examiner acknowledges, on page 2 of the Office Action, that Ogiso fails to teach or suggest the above-italicized limitation of claims 1, 11, and 13. To cure this deficiency, the Examiner turns to Gaessler. The Examiner's reliance on Gaessler is, however, misplaced. The Examiner states that: "Gaessler shows that the provision of a means for calculating the amount of a residual amount of gas inside of a cylinder is old and well known in the art." Even assuming, *arguendo*, that this is true based on the teachings in ¶¶ [0071]-[0072] of Gaessler, it is irrelevant. The above-italicized limitations of claims 1, 11, and 13 do not recite calculating the residual amount of gas in the cylinder. Rather, the above-italicized limitations recite "calculating a gas amount *spit-back to an intake side* from the inside of the cylinder when said intake valve is opened." In contrast, the residual amount of gas in Gaessler's cylinder remains in the cylinder during stroke 5 and is ejected during stroke 6, *i.e.*, the residual amount is not "spit-back to an intake side from inside of the cylinder" when the intake valve is opened. *See*, Gaessler at ¶¶ [0059]-[0063]. Moreover, as Gaessler fails to teach or suggest calculating "a gas amount spit-back to an intake side from the inside of the cylinder," Gaessler can not be used to cure the deficiencies of Ogiso.

In light of at least the foregoing reasons, the combination of Gaessler and Ogiso fails to teach or suggest each of the limitations of claims 1, 11, and 13. As a result, the combination of Gaessler and Ogiso can not be used to reject claims 1, 11, and 13, or any claim dependent thereon, under 35 U.S.C. § 103(a). Moreover, as claim 15 depends from claim 13, claim 15 is also allowable over the combination of Gaessler and Ogiso, without regard to the other patentable limitations recited therein. Accordingly, a withdrawal of the rejection of claim 1, 11, 13, and 15 is both warranted and earnestly solicited.

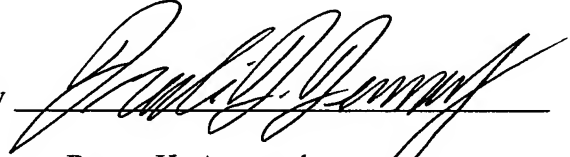
### CONCLUSION

For the aforementioned reasons, claims 1-5, 11, and 13-15 are now in condition for allowance. A Notice of Allowance at an early date is respectfully requested. The Examiner is invited to contact the undersigned if such communication would expedite the prosecution of the application.

Respectfully submitted,

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By



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THE COMMISSIONER IS HEREBY AUTHORIZED TO CHARGE ANY ADDITIONAL FEES WHICH MAY BE REQUIRED REGARDING THIS APPLICATION UNDER 37 C.F.R. §§ 1.16-1.17, OR CREDIT ANY OVERPAYMENT, TO DEPOSIT ACCOUNT NO. 19-0741. SHOULD NO PROPER PAYMENT BE ENCLOSED HERewith, AS BY A CHECK BEING IN THE WRONG AMOUNT, UNSIGNED, POST-DATED, OTHERWISE IMPROPER OR INFORMAL OR EVEN ENTIRELY MISSING, THE COMMISSIONER IS AUTHORIZED TO CHARGE THE UNPAID AMOUNT TO DEPOSIT ACCOUNT NO. 19-0741. IF ANY EXTENSIONS OF TIME ARE NEEDED FOR TIMELY ACCEPTANCE OF PAPERS SUBMITTED HERewith, APPLICANT HEREBY PETITIONS FOR SUCH EXTENSION UNDER 37 C.F.R. § 1.136 AND AUTHORIZES PAYMENT OF ANY SUCH EXTENSIONS FEES TO DEPOSIT ACCOUNT NO. 19-0741.